

REMARKS

Applicant appreciates the thorough examination of the application that is reflected in the Office Action dated April 23, 2004. Applicant rewrites claims 4, 9, 14 and 19 in independent form, and amends those claims to include additional limitations that further distinguish over the cited references. Applicant amends each of independent claims 1, 4, 9, 11, 14, 19, 21, 22, 23, 24, and 25 to clarify those claims by explicitly reciting that the multi-cast service is transmitted to each of the subscribers. Applicant submits that this amendment does not change the scope of claims 1, 4, 9, 11, 14, 19, 21, 22, 23, 24, and 25, but merely explicitly recites that which was implicitly recited in claims 1, 4, 9, 11, 14, 19, 21, 22, 23, 24, and 25. This amendment is not made in response to any rejection, but to further clarify the claims. Applicant adds new dependent claims 26-56 that include additional features that are neither taught nor suggested by the cited references.

Claims 1-56 are pending in the application. Applicant respectfully requests reconsideration of the application.

Art-based Rejections

The Official Action rejects claims 1, 4, 5, 6, 9, 11, 14, 15, 16, 19, 21, 22, 23, 24, and 25 under 35 U.S.C. 102(e) as being anticipated by Sato, rejects claims 2, 3, 12 and 13 under 35 U.S.C. 103(a) as being unpatentable over Sato, rejects claims 7, 8, 10, 17, 18 and 20 under 35 U.S.C. 103(a) as being unpatentable over Sato further in view of Honkasalo.

Applicant respectfully disagrees and traverses these rejections for at least the following reasons.

The Sato patent publication relates to system for providing multicast services. As discussed at paragraph 0057 of the Sato patent publication:

[0057] In FIG. 2, the wireless base station 20 includes a transceiver 21, a multicast information storage unit 22, a network control unit 23, and an information delivery control unit 24. The transceiver 21 carries out wireless communication with each wireless terminal 10 residing in the service area Es. The network control unit 23 serves as a source of information, and communicates with a server through a predetermined network (e.g., an IP network), for example, to obtain multicast information to be delivered. The multicast information storage

unit 22 stores the multicast information that the network control unit 23 received through the predetermined network. This corresponds to a buffering operation. The information delivery control unit 24 attends to control for delivering the multicast information from the transceiver 21 to each wireless terminal 10 situated in the service area Es as the multicast information is successively stored in the multicast information storage unit 22. (Emphasis added.)

Claims 1-20 and 23-25

Applicant respectfully submits that the cited references fail to teach or suggest, for example, “generating an identifier for a group of subscribers, wherein the identifier is for accessing a multi-cast service,” as required by claim 1.

Applicant notes that in a true multi-casting system, as defined by Applicant’s specification at paragraph [1024], the base station communicates with wireless terminals that subscribe to a multicast service, as opposed to a broadcast system, such as that taught by Sato, in which the base station communicates by broadcasting to each of the terminals in a given service area. Thus, although Sato uses the term “multicast,” it appears based on underlined portions of paragraph 0057 above that Sato actually discusses a “broadcast” type system. In Sato, it appears to be unnecessary to generate an identifier for each subscriber since the “transceiver 21 carries out wireless communication with each wireless terminal 10 residing in the service area Es.”

Accordingly, Applicant respectfully submits that the cited references fail to teach or suggest, for example, “generating an identifier for a group of subscribers, wherein the identifier is for accessing a multi-cast service,” as required by claim 1.

In addition, Applicant respectfully submits that the cited references also fail to teach or suggest, for example, “transmitting the identifier and the multi-cast service on at least one channel, wherein the multi-cast service is transmitted to each of the subscribers in accordance with the timing determined by the channel quality information,” as required by claim 1.

Rather, Sato merely discloses, at paragraph 0073, the use of three spreading codes C1, C2 and C3 that are “chosen as the transmission conditions of multicast information for the wireless terminals” based on the reception quality thereof. However, Applicant respectfully submits that the cited references fail to teach or suggest, for example, that the “multi-cast service is transmitted to each of the subscribers in accordance with the timing. Applicants submit that the spreading code does not necessarily affect the “timing” at which the multicast service is transmitted, and is

only one variable that might influence “transmission format.” Applicant also notes that Sato also differs from the claimed invention since the different spreading codes that are used to transmit to different subscribers are different. Because the multicast service in Sato is transmitted using different spreading codes for different users, Sato does not teach or suggest that “the multi-cast service is transmitted to each of the subscribers in accordance with the timing,” as required by claim 1.

Accordingly, Applicant respectfully submits that the cited references also fail to teach or suggest, for example, “transmitting the identifier and the multi-cast service on at least one channel, wherein the multi-cast service is transmitted to each of the subscribers in accordance with the timing determined by the channel quality information,” as required by claim 1.

Thus, Applicant respectfully submits that nothing in the Sato reference teaches or suggests “generating an identifier for a group of subscribers, wherein the identifier is for accessing a multi-cast service,” or “transmitting the identifier and the multi-cast service on at least one channel, wherein the multi-cast service is transmitted to each of the subscribers in accordance with the timing determined by the channel quality information,” as required by each of claims 1 and 23. Applicant further submits that claims 4, 9, and 25 are patentable for at least similar reasons. In addition, Applicant submits that the respective dependent claims 2-3, 47; 5-8, 48; 10 and 49; 54; and 44-46 and 56, are also patentable over the cited references at least by virtue of their dependency, and also because those claims include features that are neither taught nor suggested by the cited references.

Similarly, Applicants respectfully submit that nothing in the Sato reference teaches or suggests, for example, “generating an identifier for a group of subscribers, wherein the identifier is for accessing a multi-cast service,” or “transmitting the identifier and the multi-cast service on at least one channel, wherein the multi-cast service is transmitted to each of the subscribers in accordance with the transmission format determined by the channel quality information,” as required by each of claims 11 and 24.

In rejecting claims 11 and 24, at paragraph 3, page 3 of the Office Action, the Office essentially asserts that the limitation “transmission format,” required by claims 11 and 24, is met by Sato’s teaching at paragraph [0092] that “parameters that can be altered include the number of spreading codes, the number of time slots, the modulation multi-number, the bit rate, etc.

Applicant notes, however, that Sato does not teach or suggest that “the multi-cast service is transmitted to each of the subscribers in accordance with” a transmission format common to all subscribers.

Applicant further submits that claims 14, 19, 21, 22 and 25 are patentable for at least similar reasons. In addition, Applicant submits that the respective dependent claims 12-13, 26-28; 15-18, 29-31, 50; 20, 32-34 and 51; 35-37 and 52; 38-40 and 53; 41-43 and 55; and 44-46 and 56, are also patentable over the cited references at least by virtue of their dependency, and also because those claims include features that are neither taught nor suggested by the cited references.

Claims 1 and 23

Claim 23 relates to a method for broadcasting to a group of subscribers in a cellular communication network. Claim 23 requires:

- generating an identifier for a group of subscribers, wherein the identifier is for accessing a multi-cast service;
- using channel quality information for at least one subscriber to determine the **timing** of the multi-cast service to the group of subscribers; and
- transmitting the identifier and the multi-cast service on at least one channel, wherein the **multi-cast service is transmitted to each of the subscribers in accordance with the timing** determined by the channel quality information. (Emphasis added.)

In addition to the reasons stated above, Applicant submits that claims 1 and 23 are also patentable over the cited references since the cited references fail to teach or suggest “using channel quality information for at least one subscriber to determine the timing of the multi-cast service to the group of subscribers,” or “transmitting the identifier and the multi-cast service on at least one channel, wherein the multi-cast service is transmitted to each of the subscribers in accordance with the timing determined by the channel quality information,” as required by claims 1 and 23. The fact that Sato uses different spreading codes for different users based on their respective reception quality would necessarily means that the “timings” of each transmission are different. Accordingly, in Sato the multi-cast service is not transmitted “to each of the subscribers in accordance with the timing determined by the channel quality information,” as required by claims 1 and 23.

With respect to claims 1 and 23, the Examiner has asserted that the limitations of those claims are well-known or obvious, but has not cited a reference to support of this position. Applicant respectfully traverses this rejection, and to preserve Applicant's argument on appeal, Applicant requests that the Examiner provide an affidavit that supports the rejection of claims 1 and 23 based on the official notice of the Examiner. Alternatively, in the event the Examiner seeks to maintain this ground of rejection, Applicant requests that the Examiner provide documentary evidence that these features would indeed be well-known. *See* MPEP 2144.03, 37 C.F.R. § 1.104 (d)(2), and *In re Lee*, 277 F.3d 1338, 1344-45, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002) (finding that reliance on "common knowledge and common sense" did not fulfill the PTO's obligation to cite references to support its conclusions as PTO must document its reasonings on the record to allow accountability and effective appellate review).

Accordingly, Applicant respectfully submits that claim 23 is patentable over the cited references, and that dependent claim 54 is patentable at least by virtue of its dependency from independent claim 23, and also because those claims include features that are neither taught nor suggested by the cited references. Applicant further submits that independent claim 1 is patentable for at least the same reasons, and that dependent claims 2-3 and 47 are patentable at least by virtue of their dependency from independent claim 1, and also because those claims include features that are neither taught nor suggested by the cited references.

Claims 3 and 13

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the

allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

Applicant submits that the Sato reference fails to teach or suggest "scrambling the multi-cast service before transmitting the multi-cast service on the second channel, wherein the scrambling is performed by using a code known only to the group of subscribers," as required by claims 3 and 13. Moreover, Applicant submits that "scrambling the multi-cast service before transmitting the multi-cast service on the second channel, wherein the scrambling is performed by using a code known only to the group of subscribers" would not be inherent in the Sato reference. In normal wireless systems, a scrambling code is common to all users in a given cell, not just to specific subscribers. Even assuming *arguendo* that the limitations of claim 3 may occur or be present in the Sato reference, Applicant submits that is not sufficient to establish the inherency of that result or characteristic. Applicant further submits that nothing in the Sato reference makes it clear that the multi-cast service is scrambled "before transmitting the multi-cast service on the second channel, wherein the scrambling is performed by using a code known only to the group of subscribers." Nothing in Sato suggest that this limitation would necessarily be present in the Sato reference, or that doing so would not be so recognized by persons of ordinary skill based on the Sato reference. The Examiner has not provided a basis in fact and/or technical reasoning that reasonably supports the determination that "scrambling the multi-cast service before transmitting the multi-cast service on the second channel, wherein the scrambling is performed by using a code known only to the group of subscribers" necessarily flows from the teachings of the Sato reference.

Accordingly, based on the Sato reference, Applicant submits that the Office has not established inherency. For at least the above reasons, Applicant requests that the rejection of claims 3 and 13 be withdrawn. In the event the Examiner seeks to maintain the rejection of claims 3 and 13, Applicant respectfully requests that the Examiner cite a reference that teaches the limitations of claims 3 and 13.

Claims 4, 9, 14 and 19

Claim 9 relates to an apparatus for multi-cast transmissions that minimizes channel resources. Claim 9 requires:

a memory element; and
a processing element for executing a set of instructions stored in the memory element, the set of instructions for:
generating an identifier for a group of subscribers to a multi-cast service, wherein the identifier is for accessing the multi-cast service;
choosing the channel quality information of the subscriber identified by the identifier and having the worst channel conditions;
determining the timing of the multi-cast service that allows the subscriber with the worst channel condition to receive the multicast service with optimal channel quality, wherein the timing is determined based on the channel quality information associated with the subscriber with the worst channel condition; and
transmitting the identifier and the multi-cast service on at least one channel, wherein the multi-cast service is transmitted **to each of the subscribers** in accordance with the **timing** determined by the channel quality information. (Emphasis added.)

In addition to the reasons stated above, Applicant submits that claim 9 is also patentable over the cited references since the cited references fail to teach or suggest each of the above limitations required by claim 9. For example, Applicant submits that the cited references fail to teach or suggest **“generating an identifier for a group of subscribers,” “choosing the channel quality information of the subscriber identified by the identifier and having the worst channel conditions,” “determining the timing of the multi-cast service that allows the subscriber with the worst channel condition to receive the multicast service with optimal channel quality,” or “transmitting the identifier and the multi-cast service on at least one channel,** wherein the multi-cast service is transmitted **to each of the subscribers** in accordance with the **timing** determined by the channel quality information,” as required by claim 9. Applicant further submits that dependent claims 10 and 49 are patentable at least by virtue of their dependency from independent claims 10 and 49, and also because claims 10 and 49 include features that are neither taught nor suggested by the cited references.

Applicant further submits that independent claim 4 is patentable for at least similar reasons, and that dependent claims 5-8 and 48 are patentable at least by virtue of their dependency from independent claim 4, and also because those claims include features that are neither taught

nor suggested by the cited references. Applicant further submits that independent claim 14 is patentable for similar reasons, and that dependent claims 15-18, 29-31 and 50 are patentable at least by virtue of their dependency from independent claim 14, and also because those claims include features that are neither taught nor suggested by the cited references. Applicant further submits that independent claim 19 is patentable for similar reasons, and that dependent claim 20, 32-34, 50 and 51 are patentable at least by virtue of their dependency from independent claim 19, and also because those claims include features that are neither taught nor suggested by the cited references.

Claims 8 and 18

Claim 8 depends from claim 7 which depends from claim 4, and further defines the limitation “choosing the channel quality information of the subscribers with the worst channel conditions.” Claim 8 requires:

transmitting a plurality of **test data packets** to the group of subscribers;

waiting for a plurality of **acknowledgment signals** from the group of subscribers **in response to the plurality of test data packets**; and

transmitting the multi-cast service **if the plurality of acknowledgment signals indicates a response from a predetermined percentage of the group of subscribers**. (Emphasis added)

The Office, at paragraph 15 of the Office Action, concedes that none of the cited reference expressly disclose this feature required by claims 5 and 15. Rather, the Office asserts that these features of claim 8 are “well-known.”

With respect to claims 8 and 18, the Examiner asserts that the limitations of those claims are well-known, but has not cited a reference to support this position. Applicant respectfully traverses this rejection, and to preserve Applicant's argument on appeal, Applicant requests that the Examiner provide an affidavit that supports the rejection of claims 8 and 18 based on the official notice of the Examiner. Alternatively, in the event the Examiner seeks to maintain this ground of rejection, Applicant requests that the Examiner provide documentary evidence that these features would indeed be well-known. *See* MPEP 2144.03, 37 C.F.R. § 1.104 (d)(2), and *In re Lee*, 277 F.3d 1338, 1344-45, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002) (finding that reliance on "common knowledge and common sense" did not fulfill the PTO's obligation to cite references

to support its conclusions as PTO must document its reasonings on the record to allow accountability and effective appellate review).

Accordingly, Applicant respectfully submits that claims 8 and 18 are patentable over the cited references.

Claims 21 and 22

Claim 22 relates to a method for broadcasting to a group of subscribers in a cellular communication network. Claim 22 requires:

determining the channel quality information for a plurality of subscribers;
 identifying the subscriber with the worst channel conditions;
 scrambling a multi-cast service using a scrambling code **known to the plurality of subscribers**; and
 transmitting the scrambled multi-cast service to the plurality of subscribers, wherein the scrambled multi-cast service is transmitted **to each of the subscribers in accordance with a transmission format that is optimal for the subscriber with the worst channel conditions.** (Emphasis added.)

In rejecting claims 21 and 22, the Office asserts that “It is inherent in a CDMA system that the service is scrambled using a code and descrambled by the user with that code in order to read the data. See paragraph 0061.”

Applicant respectfully submits that the cited references fail to teach or suggest, for example, that “scrambling a multi-cast service using a scrambling code **known to the plurality of subscribers**,” as recited in claim 22. As explained above, in normal CDMA systems, the scrambling code is known by all users in a service area, not just subscribers. Accordingly, Applicant respectfully submits that the cited references fail to teach or suggest, for example, that “scrambling a multi-cast service using a scrambling code known to the plurality of subscribers,” as recited in claim 22.

In addition, for at least the reasons noted above, Applicant respectfully submits that the cited references fail to teach or suggest, for example, that “the scrambled multi-cast service is transmitted to each of the subscribers in accordance with a transmission format that is optimal for the subscriber with the worst channel conditions,” as recited in claim 22.

Thus, Applicant respectfully submits that the cited references fail to teach or suggest at least the above recitations of claim 22. Accordingly, Applicant respectfully submits that claim 22

and its dependent claims 38-40 and 53 are patentable over the cited references. Applicant further submits that independent claim 21 and its dependent claims 35-37 and 52 are patentable for at least the same reasons.

Claims 25, 2 and 12

Claim 25 relates to a method for efficient multi-cast broadcasting. Claim 25 requires:

generating an identifier for a group of subscribers to a multi-cast service, wherein the identifier is for accessing a multi-cast service;
identifying the subscriber with the worst channel quality by analyzing a plurality of channel quality feedback indicators from a group of subscribers;
selecting a timing and a transmission format of the multi-cast service so **that the multi-cast service will be received by the subscriber with the worst channel conditions**; and
transmitting the identifier on a first channel and the multi-cast service on a second channel to each of the subscribers in accordance with the timing and the transmission format as determined by the subscriber with the worst channel quality. (Emphasis added.)

In addition to the reasons stated above, Applicant submits that claim 25 is also patentable over the cited references since the cited references fail to teach or suggest each of the above limitations required by claim 25.

For example, at paragraph 11 of the Office Action, the Examiner acknowledges that Sato “does not expressly disclose sending the identifier information of the multicast conditions over a first channel and sending the actual multicast information over a second channel.” In addition, Applicants submit that the cited references fail to teach or suggest “identifying the subscriber with the worst channel quality by analyzing a plurality of channel quality feedback indicators from a group of subscribers,” or “selecting a timing and a transmission format of the multi-cast service so that the multi-cast service will be received by the subscriber with the worst channel conditions,” as required by claim 25.

Accordingly, Applicant respectfully submits that claim 25 and its dependent claims 44-46 and 56 are patentable over the cited references.

In addition, Applicant submits that claims 2 and 12 are also patentable since the references fail to teach or suggest “transmitting the identifier on a first channel,” and “transmitting the multi-cast on a second channel,” as required by claims 2 and 12. In the event the Examiner seeks to

maintain the rejection of claims 2 and 12, Applicant respectfully requests that the Examiner cite a reference that teaches the limitations of claims 2 and 12.


REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

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